

REMARKS

Applicant respectfully requests reconsideration of this application in view of the foregoing amendments and the following remarks.

Claim Status

Claims 1-14 are pending in this application. Claims 1-14 have been rejected. Independent claims 1, 6 and 12 are herein amended. No new matter has been added by these amendments.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art (APA) in view of U.S. Patent No. 6,266,144 (Li).

With respect to claims 1, 6 and 12 the Examiner asserted that APA discloses a method of wafer processing having the steps of “aligning 104 and photo exposing..., coating 102 and developing 106..., [completing one lot process] ... [and] [taking a] sample overlay measurement...” In addition, the Examiner asserted that APA “does not explicitly teach [taking an overlay measurement automatically by] measuring an overlay accuracy of the wafer ... after the wafer developing step is completed...”

The Examiner further alleged, however, that Li “teaches a method of measuring the wafer having the step of automatically measuring the overlay accuracy of the wafer immediately after the develop step [as shown in FIG. 12].” Thus, according to the Examiner “it would have been obvious to one of ordinary skill in the art at the time... to modify the overlay measurement step of APA [with the step taught by Li] to provide an in-line process connection...” The Examiner is incorrect.

Upon review of Li, Li discloses a stepper and scanner exposure sequence (for use on wafers) that has an intra-field correction. In particular, Li discloses an optical stepper exposure sequence that can correct for errors caused by overexposing a wafer to the scan, thus resulting in minimizing the heat expansion of the wafer. The exposure sequence utilizes a correction factor that is acquired by performing an overlay measurement of the wafer during the scan. This overlay measurement, however, is only performed during the stepper scan (during alignment and exposure) and is only used to provide a correction factor to the scanner.

In contrast to the overlay measurement of Li, the present invention performs an overlay measurement to determine the overlay accuracy of the wafer after development is completed. In other words, the overlay measurement is performed after completion of the processing steps such as aligning, photo-exposing and coating that are used to develop wafers. Li, on the other hand, does not perform an overlay measurement after development is complete rather Li performs an overlay measurement that occurs during the development of a wafer (i.e., during the stepper scan).

In addition, the overlay measurement performed by the present invention is distinct from the overlay measurement of Li. For example, the overlay measurement of the present invention is taken to determine whether device patterns formed on the wafer during processing are properly aligned. Thus, the device patterns formed after completion of the processing steps of aligning, photo-exposing and coating are analyzed to determine if they are in proper alignment. Li simply determines whether the scanning exposure of a stepper used for example, in an alignment and exposure step, should be modified to minimize heat expansion.

Accordingly, Applicant believes the present invention is not taught or suggested by the art of record. However, the Applicant has amended claims 1, 6 and 12 in an effort to more clearly claim the feature of measuring an overlay accuracy of the wafer. Specifically, the amended claims now recite that an overlay accuracy of the wafer is measured after the wafer developing step is completed to determine whether device patterns are accurately aligned... This feature is not taught by APA or Li.

As such, Applicant believes that the invention as recited in claims 1, 6 and 12 is patentable over the cited art because neither APA nor Li, taken alone or in combination, teach, disclose or suggest the invention as claimed.

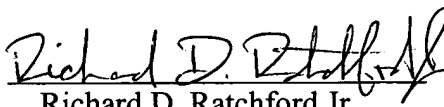
Dependent Claims

Applicant has not independently addressed the rejections of the dependent claims because Applicant submits that, in view of the amendments to the claims presented herein and, for at least similar reasons as why the independent claims from which the dependent claims depend are believed allowable as discussed, *supra*, the dependent claims are also allowable. Applicant however, reserves the right to address any individual rejections of the dependent claims should such be necessary or appropriate.

CONCLUSION

Accordingly, Applicant submits that the claims as herein presented are allowable over the prior art of record, taken alone or in combination, and that the respective rejections be withdrawn. Applicant further submits that the application is hereby placed in condition for allowance which action is earnestly solicited.

Respectfully submitted,

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